Patent Claims

1. A process control system having measurement devices (2a, 2b, 2c) and actuators (3), wherein

a) all the measurement devices (2a, 2b, 2c) and actuators (3) contain means (1) for information processing and for data interchange between the measurement devices (2a, 2b, 2c) and actuators (3),

b) all the measurement devices (2a, 2b, 2c) and actuators (3) are connected by means (4a, 4b, 4c, 4d) for bidirectional data interchange, and

c) a plurality, preferably all, of the measurement devices (2a, 2b, 2c) and actuators (3) have means (5) for data interchange with a service appliance (6) which can be connected.

2. The process control system as claimed in claim 1, characterized in that the means (1) for information processing and for data interchange between the measurement devices (2a, 2b, 2c) and actuators (3) are a microcomputer with interface devices for bi-directional data interchange.

3. The process control system as claimed in claim 1 or 2, characterized in that the means (5) for data interchange with a service appliance (6) which can be connected are an interface device for bi-directional data interchange and a plug-in apparatus, with the interface device being designed to provide current data relating to the process state for calling up.

4. The process control system as claimed in one of claims 1 to 3, characterized in that point-to-point links are produced as means (4a, 4b, 4c, 4d) for bi-directional data interchange.

5. The process control system as claimed in one of claims 1 to 3, characterized in that a bus system, to which all of the measurement devices (2a, 2b, 2c) and actuators (3) are connected, is provided as the means (4a, 4b, 4c, 4d) for bidirectional data interchange.

6. The process control system as claimed in one of claims 1 to 5, characterized in that a laptop or a PDA is used as the service appliance (6) which can be connected.

7. The process control system as claimed in one of claims 1 to 6, characterized in that the measurement devices (2a, 2b, 2c) and actuators (3) are designed to carry out plausibility checks and diagnoses.

8. The process control system as claimed in one of claims 1 to 7, characterized in that the measurement devices (2a, 2b, 2c) and actuators (3) are designed for preprocessing of recorded data.

9. A method for operation of a process control system as claimed in one of claims 1 to 8, characterized in that

- data which has been recorded in measurement devices (2a, 2b, 2c) of the system by sensors of the measurement devices (2a, 2b, 2c, for example 2c) and has possibly been obtained by preprocessing is linked to data from other measurement devices (2a, 2b, 2c, for example 2a and 2b), and all of the data is stored and is

transmitted to the respective other measurement devices (2a, 2b, 2c) and to actuators (3), and
- data which has been called up from a service device (6) which is connected to measurement devices (2a, 2b, 2c) or actuators (3) is emitted.

10. The method as claimed in claim 9, characterized in that self-diagnoses are carried out in the components (2a, 2b, 2c, 3) of the process control system, whose results are likewise stored such that they can be called up by a service device (6).